



**BLUE ROCK
ENVIRONMENTAL, INC.**

Ms. Kasey Ashley
NCRWQCB
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

April 7, 2006

Re: Closure Summary
Former Beaver Lumber Company
1220 Fifth Street, Arcata, CA
NCRWQCB Case No. 1NHU001
Blue Rock Project No. NC-1

Dear Ms. Ashley,

This report presents a *Closure Summary* for the site located at 1220 Fifth Street, Arcata, Humboldt County, California (site) (Figure 1) and was prepared for Mr. Bradford C. Floyd by Blue Rock Environmental, Inc. (Blue Rock).

This *Closure Summary* was recommended in Blue Rock's *Fourth Quarter 2005 Groundwater Monitoring Report* dated November 4, 2005. In a letter dated April 4, 2006, the North Coast Regional Water Quality Control Board (NCRWQCB) concurred with the preparation of the *Closure Summary*.

Background

Site Description

The site is located at the western end of Fifth Street, between State Highway 255 and the railroad tracks, in the town of Arcata, California (Figure 1). The site consists of a metal framed building surrounded by asphalt pavement and gravel surfacing (Figure 2). The site is surrounded by industrial, commercial, agricultural, and residential properties. Prior to the construction of the waste transfer station and truck scale, the site was paved with asphalt and used as a log deck for the former adjacent saw mill.

Site History

In September 1998, approximately 1,200 cubic yards of sand and gravel fill material and 3,500 cubic yards of silty clay soil were excavated from the site to facilitate the construction of a waste transfer station. Kern Construction Company (Kern) removed site soils from ground surface to 4 feet below ground surface (ft bgs) in the two excavation locations shown in Figure 2. Engineered fill was then placed in these locations to meet building code requirements. The excavated soil was stockpiled on asphalt near the excavation. The soils were scheduled to be hauled to Cummings Road Landfill in Eureka, California to be used as cover soil.

On September 9, 1998, trucks containing site soils were turned away from the Cummings Road Landfill because the site supervisor observed that the soil appeared dark and had an oily smell. The soil was then hauled to Kern's construction facility in Glendale, California for temporary storage.

In a September 16, 1998 letter, the City Garbage Company of Eureka informed the Humboldt County Division of Environmental Health (HCDEH) that soils from the site were refused and appeared to have an oily smell.

On September 22, 1998, Kern collected four soil samples from the soil stockpile. These samples (1, 2, 3, and 4) were analyzed for total petroleum hydrocarbons as diesel (TPHd) and sample 3 was also analyzed for hydrocarbon oil and grease (O&G). Low levels of TPHd and O&G were detected in these samples. These laboratory results were forwarded to the HCDEH.

On October 6, 1998, the Humboldt Solid Waste Management Authority (HCWMA), which was leasing the site, and the HCDEH had a meeting to discuss the disposition of the soil stockpiled at Kern's facility.

In a letter dated October 9, 1998, the HCDEH informed the HCWMA of options for handling the soils.

On October 13, 1998, Winzler and Kelly collected six soil samples (5, 6, 7, 8, 9, and 10) from the stockpiled soil for disposal profiling.

In December 1998, the NCRWQCB authorized the HCWMA to bioremediate site soils on an asphalt paved portion of the Humboldt County Road Department lease property located on the eastern edge of the Arcata Airport.

In a letter dated July 5, 2000, the NCRWQCB sent a reminder request to the HCWMA for the necessary submittal a report of waste discharge and final disposal plan.

In a letter dated December 29, 2000, the NCRWQCB requested the property owner to prepare a workplan to determine the extent soil impacts and if groundwater has been impacted in reference to the locations of excavated soils.

On March 19, 2003, Clearwater Group (Clearwater) reviewed aerial photos of the site from 1996 and interviewed the site contractor that performed the soil excavation activities. Clearwater interpreted aerial photos from 1996 to indicate that the site was previously used as a log deck and storage of heavy equipment and machinery. The site contractor indicated that the site prior to construction contained scattered wood waste on top of asphalt surfacing and below the asphalt consisted of sand and gravel fill from below asphalt to approximately 1 ft bgs and gray silty clay from 1 ft bgs to total excavated depth of 4 feet bgs. Soil was excavated 5 feet beyond the footprint of the buildings shown in Figure 2.

Summary of Investigation and Monitoring Activities

Clearwater submitted a *Preliminary Site Investigation Workplan*, dated March 31, 2003, to the NCRWQCB. The workplan proposed to evaluate the extent of petroleum hydrocarbon impacts in subsurface soil and groundwater peripheral to the two "September 1998" soil excavation areas (Figure 2). The workplan proposed to complete the investigation through the drilling of five shallow soil borings with the collection of grab groundwater samples. This workplan was approved by the NCRWQCB in a letter dated May 13, 2003.

On June 12, 2003, Clearwater supervised the drilling of five soil borings associated with the subject property: SB-1 through SB-5 (Figure 2). These soil borings were placed in locations to assess the sorbed-phase hydrocarbon impacts associated with the site. Grab groundwater samples were collected from each boring to evaluate dissolved-phase hydrocarbon impacts associated with the site. These borings were advanced to 15 ft bgs. Based on soil stockpile analytical results and area of excavation, Clearwater calculated that approximately 395 gallons of motor oil were removed from the site in 1998. Results of this investigation were presented in Clearwater's *Preliminary Site Investigation Report*, dated August 11, 2003. The NCRWQCB commented on this report in a site correspondence letter dated August 28, 2003, requesting preparation of a Workplan to define the extent of impacts and requesting lower detection limits for TPHmo. Clearwater had the laboratory revise the laboratory report to reflect the requested detection limit for TPHmo in groundwater samples collected on June 12, 2003.

Clearwater submitted a *Workplan for Additional Investigation*, dated September 29, 2003, to the NCRWQCB. The *Workplan* proposed the installation of four groundwater monitoring wells proximal to soil boring SB-2 to evaluate hydrocarbon distribution and establish a groundwater gradient and flow direction. This *Workplan* was approved with comments by the NCRWQCB in a letter dated October 31, 2003.

On January 10, 2005, Blue Rock supervised the installation of four monitoring wells associated with the subject site: MW-1 to MW-4 (Figure 2). These monitoring wells were placed in locations to assess the hydrocarbon impacts and establish a groundwater flow direction and gradient associated with the site. These borings were advanced to 15 ft bgs.

The location of investigation and sampling points are shown on Figure 2. Monitoring well construction data are included in Table 1. Cumulative subsurface soil and groundwater sampling data are summarized in Tables 2 and 3, respectively.

Summary of Chemicals of Concern

The chemicals of concern in the site subsurface appear to be predominantly Total Petroleum Hydrocarbons as Motor Oil (TPHmo).

Summary of Hydrogeology

Investigative activities indicate that the site is underlain predominantly by sediments characterized as gravel fill, silt, and silty sand to a depth of at least 15 feet bgs (historical boring logs are attached). The following stratigraphy is generally present below the site:

- 0 to 4-8 ft bgs: Gravel Fill (GW to GM)
- 4-8 to 13 ft bgs: Silt (ML)
- 13 to 15 ft bgs: Silty Sand (SM)

Depth to static water below the site typically ranges from 3 to 6 ft bgs, with seasonal high groundwater conditions occurring in late spring and seasonal low groundwater conditions occurring in late fall (Table 3). Cumulative monthly groundwater flow data from January 2005 through October 2005 show the predominant flow direction to be toward the south-southwest (Figure 3).

Summary of Residual Chemical Impacts to Soil

A total of 20 subsurface soil samples have been collected to date as part of the investigation. The majority of samples did not contain detectable analyte concentrations. The maximum TPHmo concentration in soil was 49 mg/kg in the sample from SB-2 at 10 ft bgs. The maximum TPHd concentration in soil was 24 mg/kg in the sample from MW-4 at 15 ft bgs. BTEX compounds were only detected in the sample from SB-4 at 10 ft bgs: ethylbenzene 0.018 mg/kg and xylenes 0.013 mg/kg. No BTEX concentrations were detected in any of the remaining 19 subsurface soil samples. Soil sample analytical results are listed in Table 2, and displayed in Figure 4.

Summary of Residual Chemical Impact to Groundwater

The final groundwater sampling event was conducted at the site on October 27, 2005. Water samples from wells MW-1 through MW-4 were analyzed for TPHmo, TPHd, and BTEX by EPA Methods 8105M and 8260B (with silica-gel clean-up on extractable analyses).

Neither TPHmo, TPHd, nor BTEX compounds were detected above the reporting limits in any of the samples.

Groundwater sample analytical results are shown graphically on Figure 5, and groundwater sample analytical results are summarized in Table 3.

In order to evaluate the rate of attenuation and when chemicals of concern will reach NCRWQCB clean-up Goals, concentrations of TPHmo at MW-1, MW-2, and MW-4, were plotted against time for four consecutive quarters. These data were fit with trend lines and associated equations in the method shown in Buscheck, O'Reilly, and Nelson 1993:

$$C(t) = C_0 e^{-(kt)}$$

Where,

$C(t)$ is concentration as a function of time (t)

C_0 = is concentration as $t = 0$

k = is the decay rate (t^{-1})

The following table summarizes the results:

Well	TPHmo Decay Rate (day ⁻¹)	Estimated Year Clean-up Goal Met
MW-1	-0.0042*	Already Met
MW-2	-0.0017*	Already Met
MW-4	-0.0033*	Already Met

Notes:

* = R^2 value <0.75. Although the equation producing the decay rate is <0.75, qualitative inspection of the plot indicates concentrations are decreasing.

The extent of the dissolved-phase contaminant plume associated with the site was examined over the life of the project. The dissolved-phase plume appears to be decreasing over time.

Dissolved-phase TPHmo displayed a decreasing trend in site wells, and as of October 2005 TPHmo has attenuated to below Water Quality Objectives (WQOs).

Soil Pile

Excavated soil from this site is currently stockpiled at a property located at Grange Avenue in McKinleyville, California. Work is currently planned to properly characterize the soil piles for appropriate disposition. Blue Rock will submit proposals for characterization and disposition as separate submittals in the future.

Conclusions

- No structural source or ongoing discharge is present at the site that would continue to source impacts to groundwater.
- Residual soil impacts are minimal and do not appear to represent a significant source to ongoing groundwater impact, as evidenced by declining dissolved-phase chemical concentrations that have declined to below WQOs.
- Residual TPHmo impacts to groundwater have displayed declining trends over one hydrologic cycle, and appear to have attenuated to below WQOs as of October 2005.
- No sensitive receptors appear to be threatened because the groundwater impacts at the source area have already attenuated to below WQOs.

Project Recommendations

- Blue Rock recommends that the NCRWQCB issue a letter of "No Further Action Required" for the site.
- A *Soil Management Contingency Plan* for potential future subsurface work that may encounter petroleum impacted soil at the site has been included as an attachment.

References

Buscheck, T.E., O'Reilly, K.T., and Nelson, S.N. 1993. *Evaluation of Intrinsic Bioremediation at Field Sites*. Proceedings of the Conference of Petroleum Hydrocarbons and Organic Chemicals in Ground Water, National Groundwater Association/API, Houston, TX. November 10-12.

Certification

This report was prepared under the supervision of a California Professional Geologist at Blue Rock. All statements, conclusions, and recommendations are based upon published results from past consultants, field observations by Blue Rock, and analyses performed by a state-certified laboratory as they relate to the time, location, and depth of points sampled by Blue Rock. Interpretation of data, including spatial distribution and temporal trends, are based on commonly used geologic and scientific principles. It is possible that interpretations, conclusions, and recommendations presented in this report may change, as additional data become available and/or regulations change.

Information and interpretation presented herein are for the sole use of the client and regulating agency. The information and interpretation contained in this document should not be relied upon by a third party.

The service performed by Blue Rock has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

If you have any questions regarding this project, please contact us at (707) 441-1934.

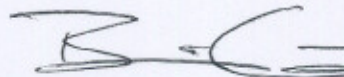
Sincerely,
Blue Rock Environmental, Inc.

Prepared by:

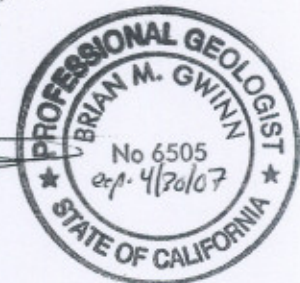


Scott Ferriman
Project Scientist

Reviewed by:



Brian Gwinn, PG
Principal Geologist



Attachments:

- Figure 1: Site Location Map
- Figure 2: Site Plan
- Figure 3: Cumulative Groundwater Flow Rose Diagram
- Figure 4: Investigation Soil Sample Results
- Figure 5: Final Groundwater Sample Results – 10/27/05

- Chart 1: Dissolved-phase TPHmo vs. Time for MW-1
- Chart 2: Dissolved-phase TPHmo vs. Time for MW-2
- Chart 3: Dissolved-phase TPHmo vs. Time for MW-4

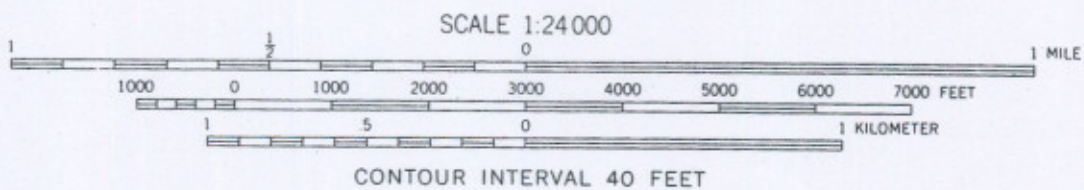
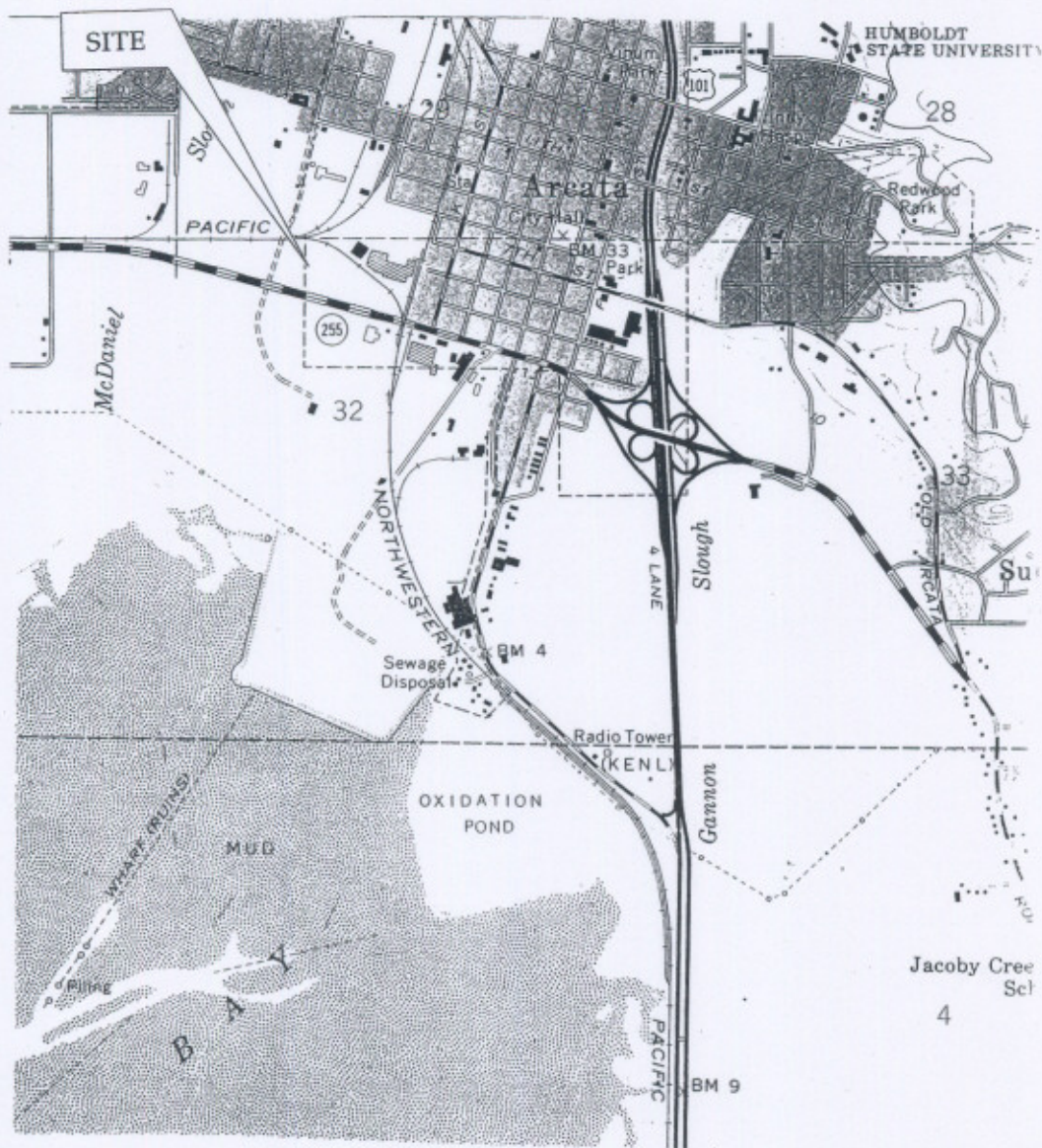
- Table 1: Well Construction Details
- Table 2: Soil Sample Analytical Results
- Table 1: Groundwater Elevations and Analytical Results

- Boring Log and Well Construction Diagrams

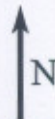
- *Soil Management Contingency Plan*

Distribution:

- Mr. Bradford C. Floyd, 819 Seventh Street, Eureka, CA 95501



MAP SOURCE: USGS Arcata South, CA
Quadrangle



Site Location Map

Former Beaver Lumber Company
1220 Fifth Street
Arcata, California

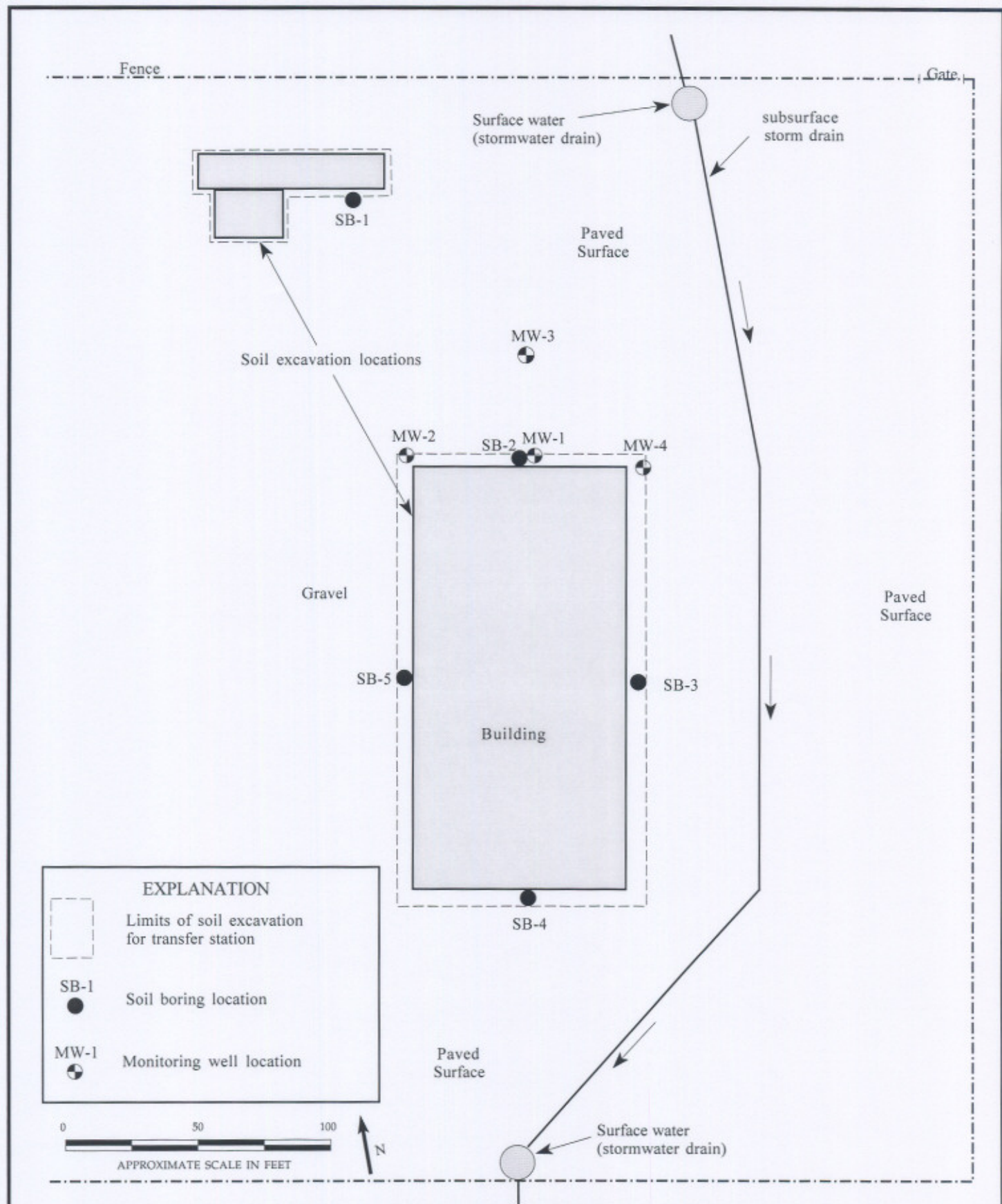


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Date
1/05

Figure
1



Site Plan

Former Beaver Lumber Company
1220 Fifth Street
Arcata, California

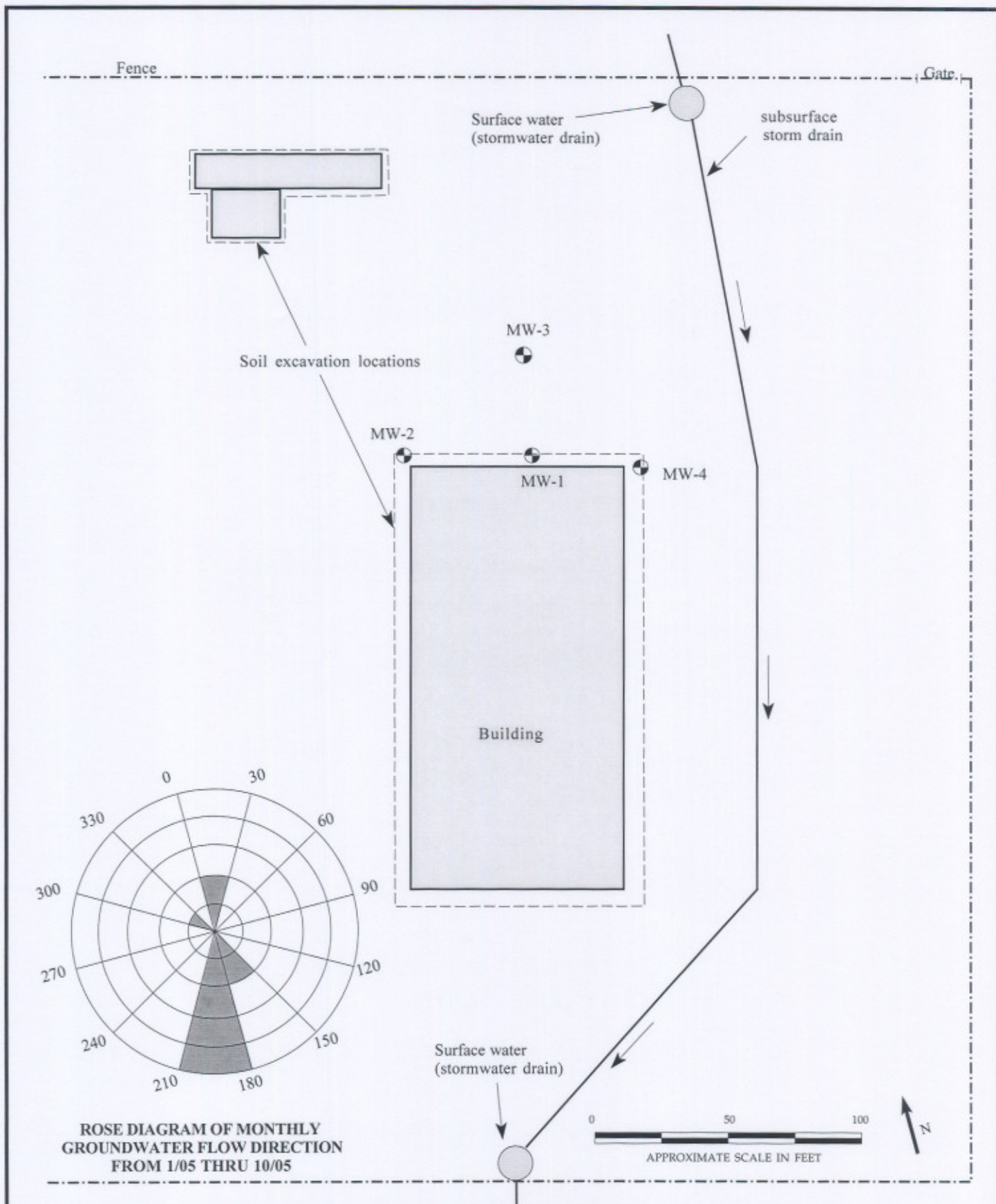


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Figure
2



Cumulative Groundwater Flow Rose Diagram

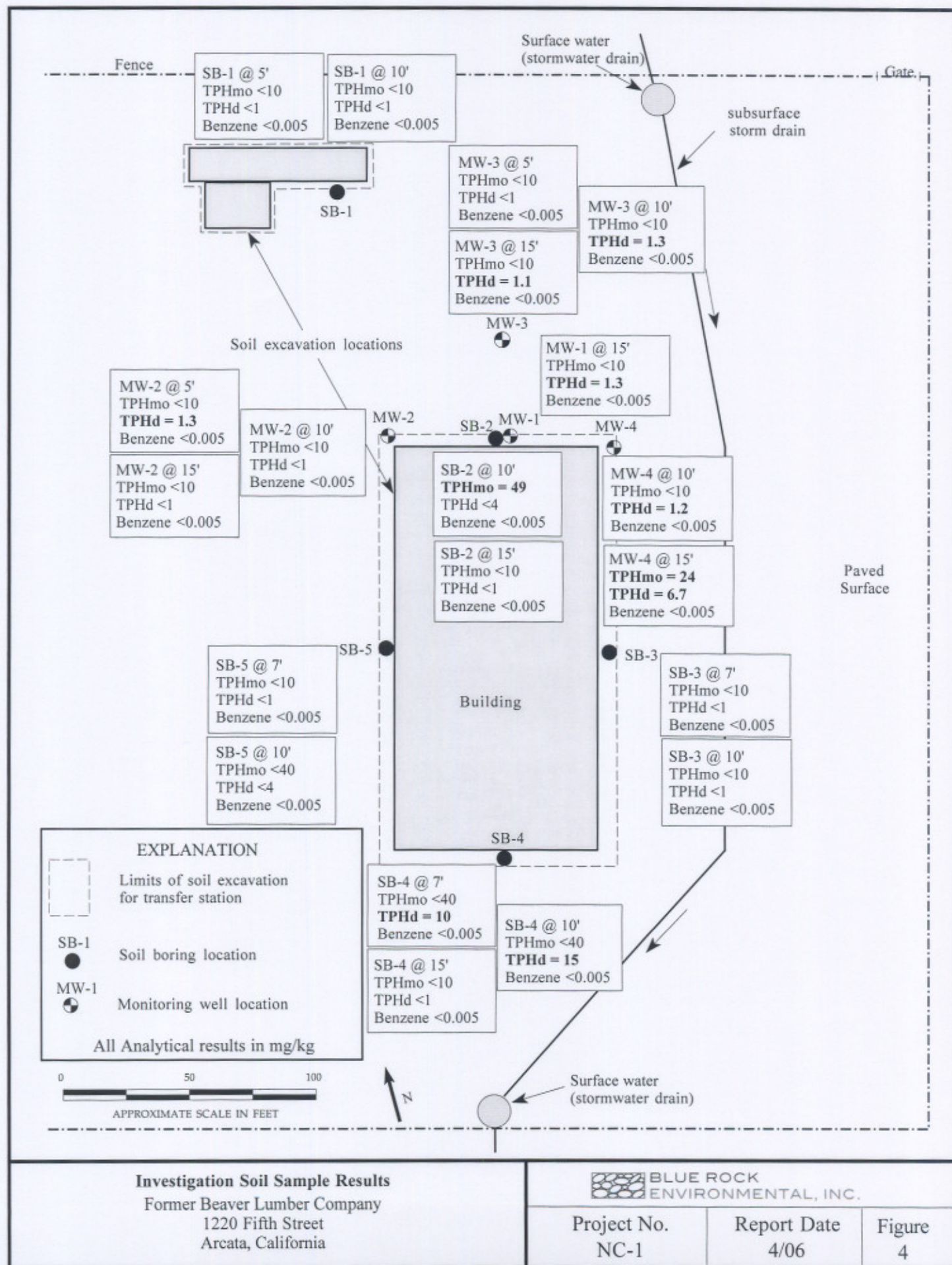
Former Beaver Lumber Company
1220 Fifth Street
Arcata, California

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NC-1

Report Date
4/06

Figure
3

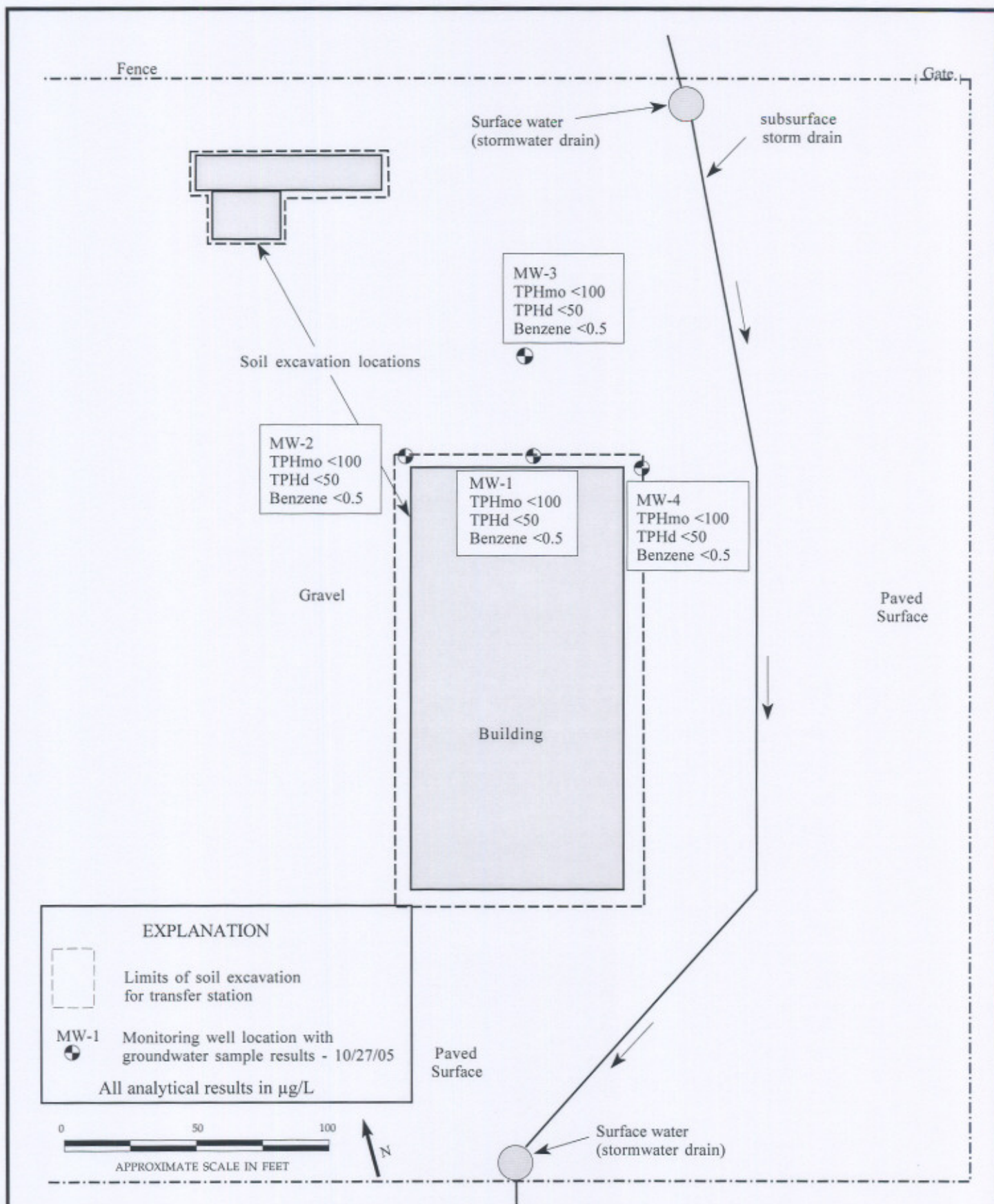


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Figure
4



Final Groundwater Monitoring Results - 10/27/05

Former Beaver Lumber Company
1220 Fifth Street
Arcata, California



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Figure
5

Chart 1
Dissolved-Phase TPHmo vs. Time for MW-1
Former Beaver Lumber Company
1220 Fifth Street
Arcata, CA

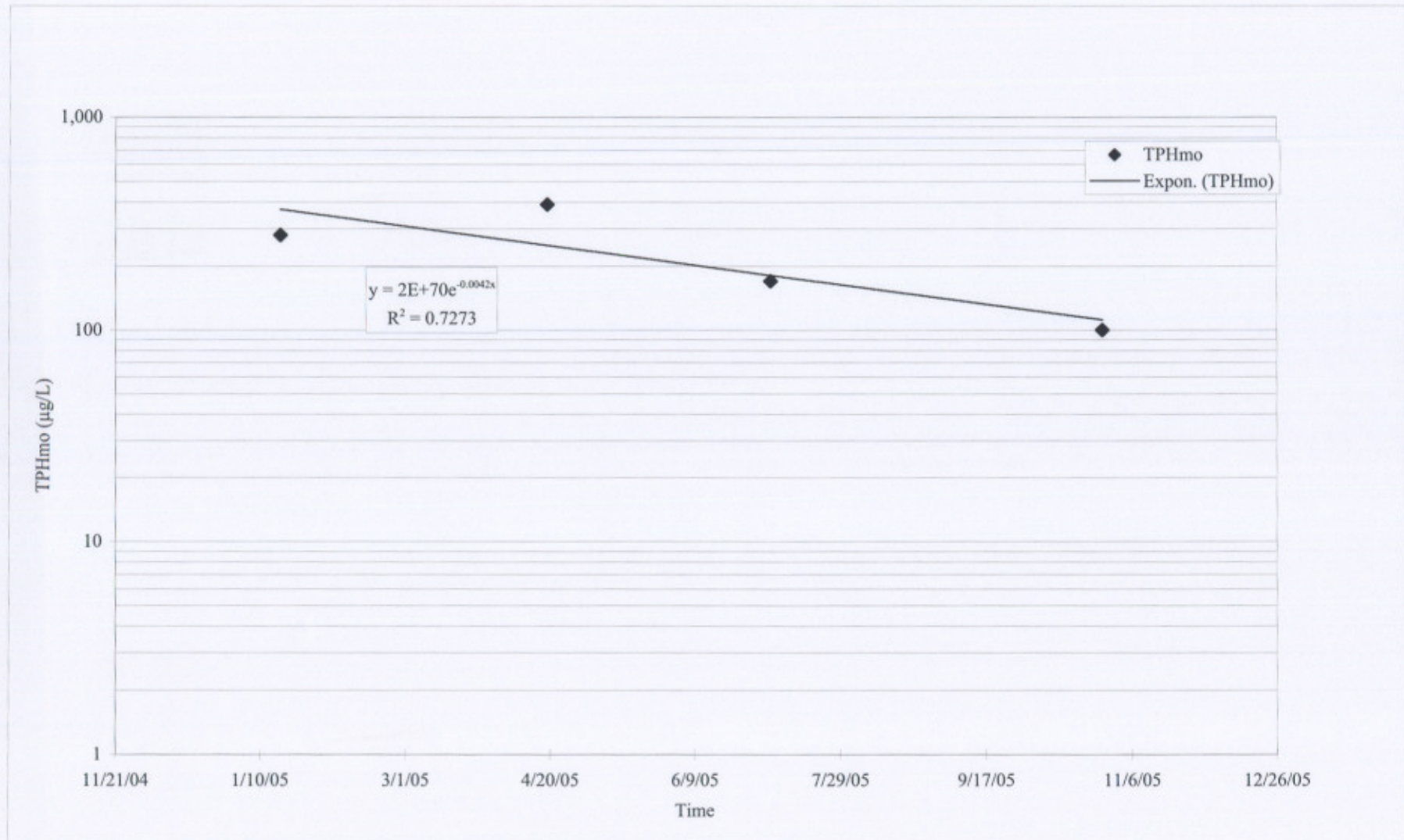


Chart 2
Dissolved-Phase TPHmo vs. Time for MW-2
Former Beaver Lumber Company
1220 Fifth Street
Arcata, CA

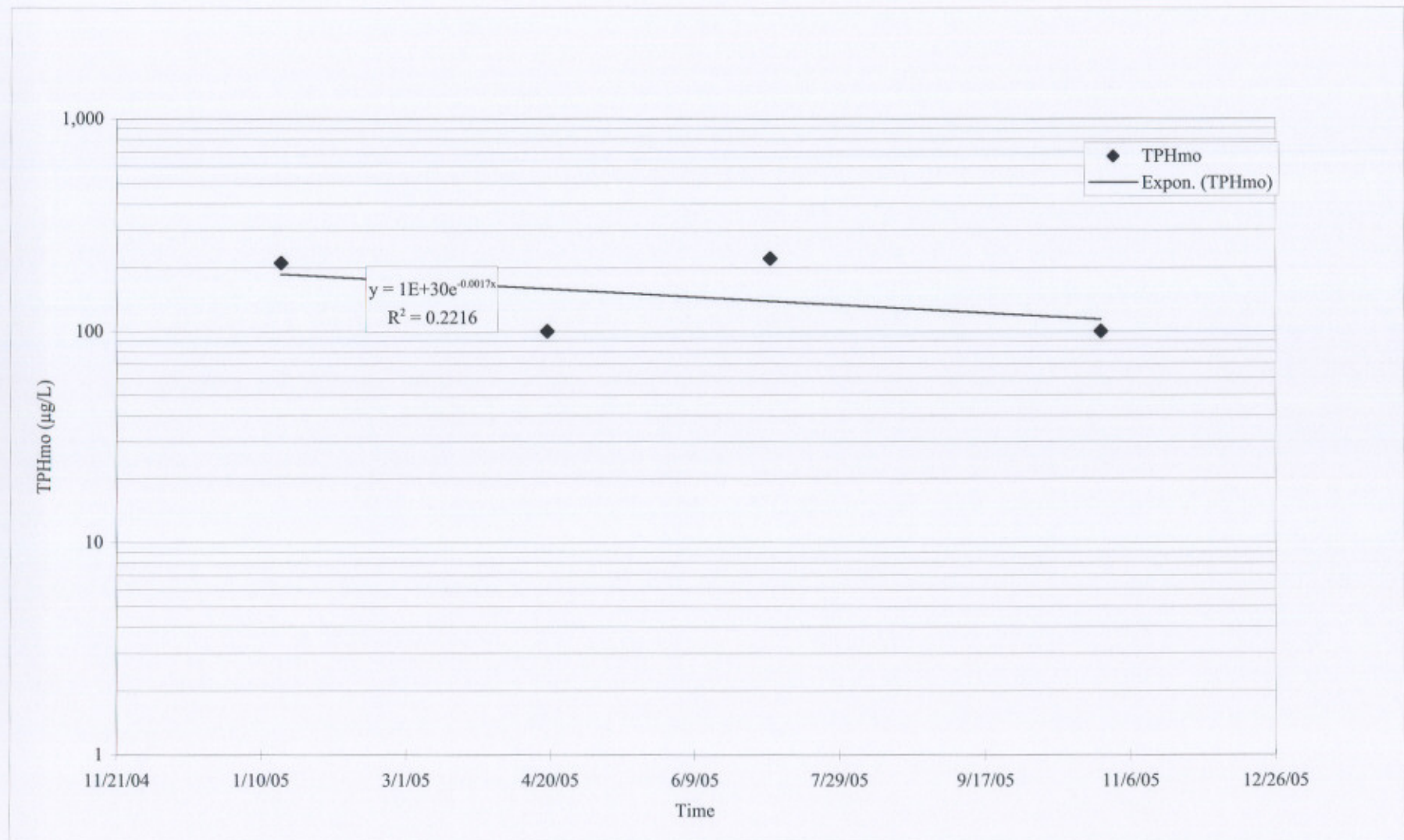


Chart 3
Dissolved-Phase TPHmo vs. Time for MW-4
Former Beaver Lumber Company
1220 Fifth Street
Arcata, CA

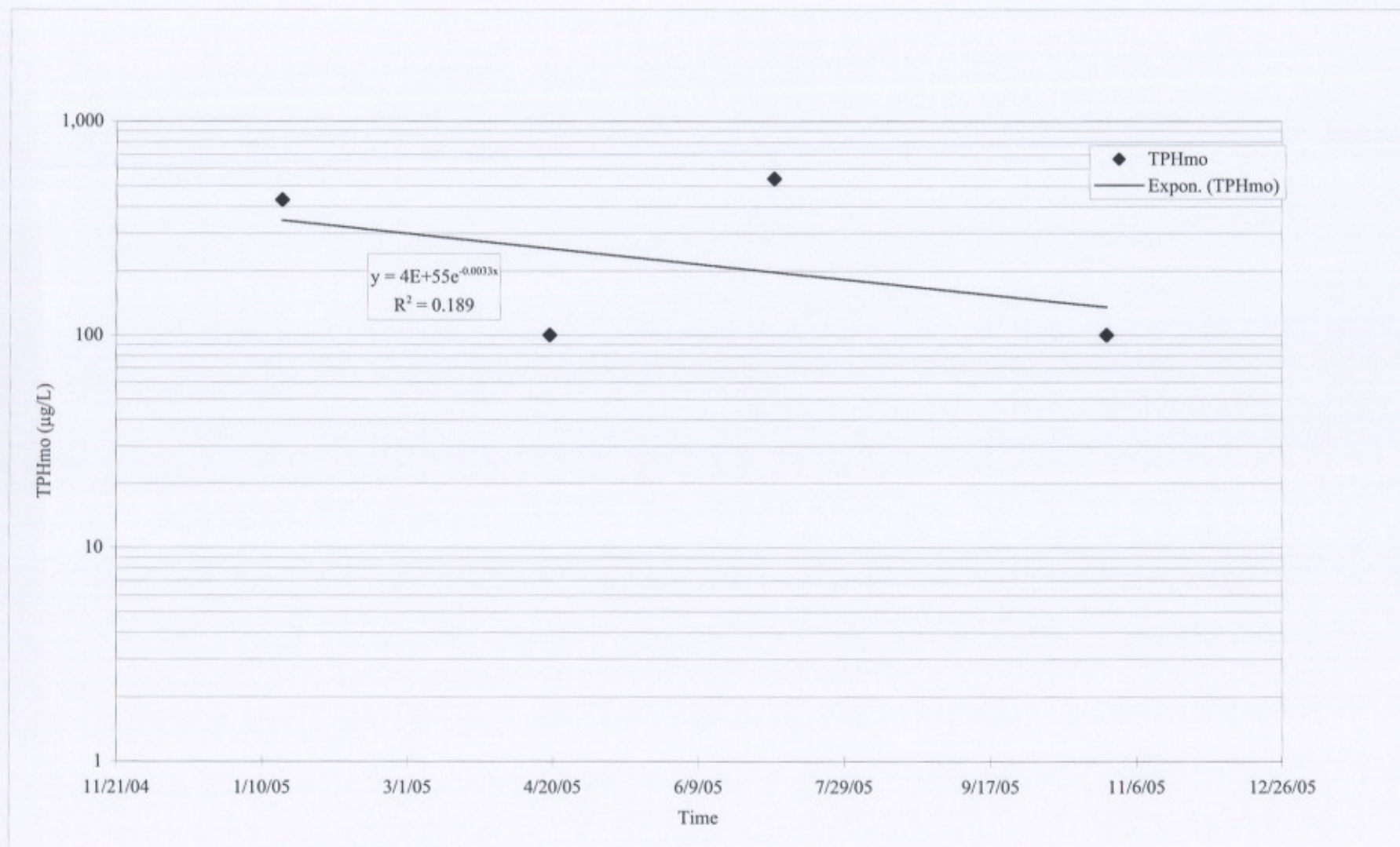


Table 1
WELL CONSTRUCTION DETAILS

Former Beaver Lumber Company
1220 Fifth Street
Arcata, California
Blue Rock Project No. NC-1

Well Identification	Date Installed	Installed by	Casing Diameter (inches)	Total Depth (feet)	Blank Interval (feet)	Screened Interval (feet)	Slot Size (inches)	Filter Pack (feet)	Bentonite Seal (feet)	Cement (feet)
MW-1	1/10/05	Blue Rock	2	15	0-3	3-15	0.01	2-15	1-2	0-1
MW-2	1/10/05	Blue Rock	2	15	0-3	3-15	0.01	2-15	1-2	0-1
MW-3	1/10/05	Blue Rock	2	15	0-3	3-15	0.01	2-15	1-2	0-1
MW-4	1/10/05	Blue Rock	2	15	0-3	3-15	0.01	2-15	1-2	0-1

Table 2
SOIL SAMPLE ANALYTICAL RESULTS
Former Beaver Lumber Company
1220 Fifth Street
Arcata, California
Blue Rock Project # NC-1

Sample ID	Sample Depth (feet bgs)	Sample Date	TPHmo (mg/kg)	TPHd (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)
SB-1	5	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
	10	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
SB-2	10	6/12/03	49	<4	<0.005	<0.005	<0.005	<0.005
	15*	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
SB-3	7	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
	10	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
SB-4	7	6/12/03	<40	10	<0.005	<0.005	<0.005	<0.005
	10	6/12/03	<40	15	<0.005	<0.005	0.018	0.013
	15*	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
SB-5	7	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
	10	6/12/03	<40	<4	<0.005	<0.005	<0.005	<0.005
MW-1	15	1/10/05	<10	1.3	<0.005	<0.005	<0.005	<0.005
MW-2	5	1/10/05	<10	1.3	<0.005	<0.005	<0.005	<0.005
	10	1/10/05	<10	<1	<0.005	<0.005	<0.005	<0.005
	15	1/10/05	<10	<1	<0.005	<0.005	<0.005	<0.005
MW-3	5	1/10/05	<10	<1	<0.005	<0.005	<0.005	<0.005
	10	1/10/05	<10	1.3	<0.005	<0.005	<0.005	<0.005
	15	1/10/05	<10	1.1	<0.005	<0.005	<0.005	<0.005

Table 2
SOIL SAMPLE ANALYTICAL RESULTS

Former Beaver Lumber Company
1220 Fifth Street
Arcata, California
Blue Rock Project # NC-1

Sample ID	Sample Depth (feet bgs)	Sample Date	TPHmo (mg/kg)	TPHd (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)
MW-4	10	1/10/05	<10	1.2	<0.005	<0.005	<0.005	<0.005
	15	1/10/05	24	6.7	<0.005	<0.005	<0.005	<0.005

Notes

bgs: below ground surface

mg/kg = milligrams per kilogram=ppm=parts per million

<###: Not detected above the method detection limit as shown.

TPHmo: Total Petroleum Hydrocarbons as motor oil by EPA Method 3550/8015M

TPHd: Total Petroleum Hydrocarbons as diesel by EPA Method 3550/8015M

BTEX by EPA Method 8020 and 8260B

* : Samples analyzed 7 days past 14 day holding time for TPHmo and TPHd.

Table 3
GROUNDWATER ELEVATIONS AND
ANALYTICAL RESULTS

Former Beaver Lumber Company

1220 Fifth Street

Arcata, California

Blue Rock Project No. NC-1

Sample ID	Sampling Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHmo (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
SB-1	6/12/03	--	--	--	<175	<50	<0.5	<0.5	<0.5	<1
SB-2	6/12/03	--	--	--	4,000	<200	<0.5	<0.5	<0.5	<1
SB-3	6/12/03	--	--	--	<175	<50	<0.5	<0.5	<0.5	<1
SB-4	6/12/03	--	--	--	<175	<50	<0.5	<0.5	<0.5	<1
SB-5	6/12/03	--	--	--	<175	<50	<0.5	<0.5	<0.5	<1
MW-1	1/17/05	13.22	4.03	9.19	280*	86*	<0.5	<0.5	<0.5	<0.5
	2/7/05	13.22	3.96	9.26	--	--	--	--	--	--
	3/10/05	13.22	4.00	9.22	--	--	--	--	--	--
	4/19/05	13.22	3.81	9.41	390*	73*	<0.5	<0.5	<0.5	<0.5
	5/16/05	13.22	3.75	9.47	--	--	--	--	--	--
	6/15/05	13.22	4.06	9.16	--	--	--	--	--	--
	7/5/05	13.22	4.14	9.08	170*	<50*	<0.5	<0.5	<0.5	<0.5
	8/19/05	13.22	5.08	8.14	--	--	--	--	--	--
	9/14/05	13.22	5.45	7.77	--	--	--	--	--	--
	10/27/05	13.22	5.98	7.24	<100*	<50*	<0.5	<0.5	<0.5	<0.5
MW-2	1/17/05	12.73	3.54	9.19	210*	60*	<0.5	<0.5	<0.5	<0.5
	2/7/05	12.73	3.48	9.25	--	--	--	--	--	--
	3/10/05	12.73	3.52	9.21	--	--	--	--	--	--
	4/19/05	12.73	3.33	9.40	<100*	<50*	<0.5	<0.5	<0.5	<0.5
	5/16/05	12.73	3.26	9.47	--	--	--	--	--	--
	6/15/05	12.73	3.58	9.15	--	--	--	--	--	--
	7/5/05	12.73	3.67	9.06	220*	<50*	<0.5	<0.5	<0.5	<0.5
	8/19/05	12.73	4.61	8.12	--	--	--	--	--	--
	9/14/05	12.73	4.98	7.75	--	--	--	--	--	--
	10/27/05	12.73	5.57	7.16	<100*	<50*	<0.5	<0.5	<0.5	<0.5
MW-3	1/17/05	12.17	2.77	9.40	<100*	<50*	<0.5	<0.5	<0.5	<0.5
	2/7/05	12.17	2.83	9.34	--	--	--	--	--	--
	3/10/05	12.17	2.75	9.42	--	--	--	--	--	--
	4/19/05	12.17	2.37	9.80	<100*	<50*	<0.5	<0.5	<0.5	<0.5
	5/16/05	12.17	2.30	9.87	--	--	--	--	--	--
	6/15/05	12.17	2.80	9.37	--	--	--	--	--	--
	7/5/05	12.17	3.00	9.17	<100*	<50*	<0.5	<0.5	<0.5	<0.5
	8/19/05	12.17	4.51	7.66	--	--	--	--	--	--
	9/14/05	12.17	5.13	7.04	--	--	--	--	--	--
	10/27/05	12.17	4.98	7.19	<100*	<50*	<0.5	<0.5	<0.5	<0.5

Table 3
GROUNDWATER ELEVATIONS AND
ANALYTICAL RESULTS
Former Beaver Lumber Company
1220 Fifth Street
Arcata, California
Blue Rock Project No. NC-1

Sample ID	Sampling Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHmo (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
MW-4	1/17/05	13.80	4.62	9.18	430*	99*	<0.5	<0.5	<0.5	<0.5
	2/7/05	13.80	4.55	9.25	--	--	--	--	--	--
	3/10/05	13.80	4.57	9.23	--	--	--	--	--	--
	4/19/05	13.80	4.39	9.41	<100*	<50*	<0.5	<0.5	<0.5	<0.5
	5/16/05	13.80	4.34	9.46	--	--	--	--	--	--
	6/15/05	13.80	4.64	9.16	--	--	--	--	--	--
	7/5/05	13.80	4.74	9.06	540*	110*	<0.5	<0.5	<0.5	<0.5
	8/19/05	13.80	5.66	8.14	--	--	--	--	--	--
	9/14/05	13.80	6.05	7.75	--	--	--	--	--	--
	10/27/05	13.80	6.24	7.56	<100*	<50*	<0.5	<0.5	<0.5	<0.5
MCL					--	--	1	150	300	1,750
Taste & odor threshold					--	100	--	42	29	17
Cleanup Goals					175	100	0.5	42	29	17

Notes:

TOC: Top of casing referenced to feet above mean sea level (msl).

DTW: Depth to water as referenced to top of well casing.

GWE: Groundwater elevation as referenced to established benchmark.

TPHmo: Total Petroleum Hydrocarbons as motor oil by EPA Method 3510/8015M (* indicates silica gel cleanup).

TPHd: Total Petroleum Hydrocarbons as diesel by EPA Method 3510/8015M (* indicates silica gel cleanup).

BTEX: Benzene, toluene, ethylbenzene, and xylenes by EPA method 8020 and 8260B.

µg/L: micrograms per liter = ppb = parts per billion

--: Not analyzed, available, or applicable

MCL: Maximum contaminant level, a Federal drinking water standard based on health, technology and economics.

Taste & odor threshold: A drinking water standard

SOIL BORING AND WELL CONSTRUCTION LOG: MW-1

BLUE ROCK ENVIRONMENTAL, INC.

Page: 1 of 1

Project: NC-1

FIELD LOCATION OF BORING:						DRILLING CONTRACTOR: MDE	BORING DIAMETER: 8 inches	CLIENT/LOCATION: Former Beaver Lumber Arcata, CA			
						DRILL RIG OPERATOR: Miguel	BORING DEPTH: 15 feet	SCREEN SLOT SIZE: 0.01 inches	DRILLING DATE: 1/10/05		
						DRILL RIG TYPE: CME 75	WELL DEPTH: 15 feet	WELL MATERIAL: 2-in. PVC	FILTER PACK: 2/12		
						WELL SEAL: Neat Cement over hydrated bentonite		PLANNED USE: Monitoring	LOGGED BY: Scott Ferriman		
WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING		OVM READING (PTM)	GRAPHIC LOG OR USCS CODE	SAMPLING METHOD: Cal. Mod. Split-spoon		MONITORING INST: Thermo 580B PID	APPROVED BY: Brian Gwinn, RG	
			INTERVAL	RECOVERY			FIRST ENCOUNTERED WATER DEPTH: Approximately 6.5 feet		STATIC WATER DEPTH - DATE: 4.03 feet on 1/17/05		
		1					Asphalt				
		2					GRAVEL (GM); Gravel and sand fill material.				
		3									
		4									
		5									
		6									
		7									
		8									
		9					SILT (ML); gray, moist to wet, no odor, <10% fine grained sand.				
		10									
		11									
		12									
		13					Silty SAND (SM); gray, wet, fine grained sand, <10% silt.				
		14									
		15									
		16									
		17									
		18									
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SOIL BORING AND WELL CONSTRUCTION LOG: MW-2

BLUE ROCK ENVIRONMENTAL, INC.

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Project: NC-1


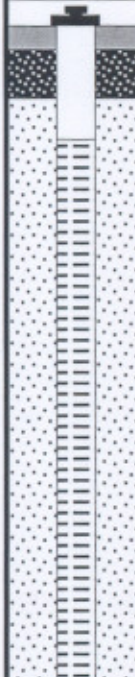

FIELD LOCATION OF BORING:				DRILLING CONTRACTOR: MDE	BORING DIAMETER: 8 inches	CLIENT/LOCATION: Former Beaver Lumber Arcata, CA			
				DRILL RIG OPERATOR: Miguel	BORING DEPTH: 15 feet	SCREEN SLOT SIZE: 0.01 inches	DRILLING DATE: 1/10/05		
				DRILL RIG TYPE: CME 75	WELL DEPTH: 15 feet	WELL MATERIAL: 2-in. PVC	FILTER PACK: 2/12		
				WELL SEAL: Neat Cement over hydrated bentonite		PLANNED USE: Monitoring	LOGGED BY: Scott Ferriman		
WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING		OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	SAMPLING METHOD: Cal. Mod. Split-spoon	MONITORING INST: Thermo 580B PID	APPROVED BY: Brian Gwinn, RG
			INTERVAL	RECOVERY			FIRST ENCOUNTERED WATER DEPTH: Approximately 6.5 feet	STATIC WATER DEPTH - DATE: 3.54 feet on 1/17/05	
		1					Asphalt		
		2					GRAVEL (GM); Gravel and sand fill material.		
		3							
		4					SILT (ML); gray, moist to wet, <10% fine grained sand.		
		5	↓	↓	0.0				
		6							
		7							
		8							
		9					Silty SAND (SM); gray, moist to wet, fine grained sand.		
		10	↓	↓	0.0				
		11							
		12							
		13							
		14							
		15	↓	↓	0.0				
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SOIL BORING AND WELL CONSTRUCTION LOG: MW-3

BLUE ROCK ENVIRONMENTAL, INC.

Page: 1 of 1

Project: NC-1

FIELD LOCATION OF BORING: 						DRILLING CONTRACTOR: MDE		BORING DIAMETER: 8 inches		CLIENT/LOCATION: Former Beaver Lumber Arcata, CA					
						DRILL RIG OPERATOR: Miguel		BORING DEPTH: 15 feet		SCREEN SLOT SIZE: 0.01 inches		DRILLING DATE: 1/10/05			
						DRILL RIG TYPE: CME 75		WELL DEPTH: 15 feet		WELL MATERIAL: 2-in. PVC		FILTER PACK: 2/12			
						WELL SEAL: Neat Cement over hydrated bentonite						PLANNED USE: Monitoring		LOGGED BY: Scott Ferriman	
SAMPLING METHOD: Cal. Mod. Split-spoon						MONITORING INST: Thermo 580B PID		APPROVED BY: Brian Gwinn, RG							
						FIRST ENCOUNTERED WATER DEPTH: Approximately 12 feet						STATIC WATER DEPTH - DATE: 2.77 feet on 1/17/05			
WELL CONSTRUCTION DETAIL 						WATER LEVEL 		DEPTH (FEET)		SAMPLING INTERVAL RECOVERY		OVM READING (PPM)		GRAPHIC LOG OR USCS CODE	
								1				Asphalt			
								2				GRAVEL (GM); Gravel and sand fill material.			
								3							
								4							
								5		0.0					
								6							
								7							
								8							
								9		0.0					
								10							
								11							
								12				SILT (ML); gray, wet, no odor, <10% fine grained sand.			
								13							
								14		0.0					
								15				Silty SAND (SM); gray, wet, fine grained sand.			
								16							
								17							
								18							
								19							
								20							
								21							
								22							
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								29							
								30							

SOIL BORING AND WELL CONSTRUCTION LOG: MW-4



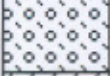
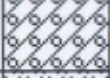








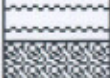

BLUE ROCK ENVIRONMENTAL, INC.

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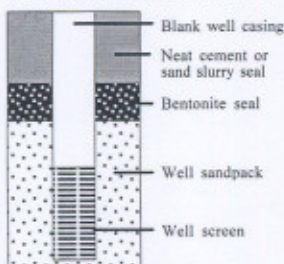
Project: NC-1

FIELD LOCATION OF BORING:						DRILLING CONTRACTOR: MDE	BORING DIAMETER: 8 inches	CLIENT/LOCATION: Former Beaver Lumber Arcata, CA		
						DRILL RIG OPERATOR: Miguel	BORING DEPTH: 15 feet	SCREEN SLOT SIZE: 0.01 inches	DRILLING DATE: 1/10/05	
						DRILL RIG TYPE: CME 75	WELL DEPTH: 15 feet	WELL MATERIAL: 2-in. PVC	FILTER PACK: 2/12	
						WELL SEAL: Neat Cement over hydrated bentonite		PLANNED USE: Monitoring	LOGGED BY: Scott Ferriman	
WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING		OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	SAMPLING METHOD: Cal. Mod. Split-spoon		MONITORING INST: Thermo 580B PID	APPROVED BY: Brian Gwinn, RG
			INTERVAL	RECOVERY			FIRST ENCOUNTERED WATER DEPTH: Approximately 3 feet		STATIC WATER DEPTH - DATE: 4.62 feet on 1/17/05	
		1					Asphalt			
		2					GRAVEL (GM); Gravel and sand fill material.			
		3								
		4								
		5								
		6								
		7								
		8								
		9					SILT (ML); gray, wet, no odor, <10% fine grained sand.			
		10			0.0					
		11								
		12								
		13								
		14			0.0		Silty SAND (SM); gray, wet, fine grained sand.			
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UNIFIED SOIL CLASSIFICATION SYSTEM - VISUAL CLASSIFICATION OF SOILS (ASTM D-2488)

MAJOR DIVISIONS		GROUP SYMBOL	GROUP NAME	DESCRIPTION	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS		GW	Well-graded gravel Well-graded gravel with sand	Well-graded gravels or gravel-sand mixtures, little or no fines.
			GP	Poorly-graded gravel Poorly-graded gravel with sand	Poorly-graded gravels or gravel sand mixture, little or no fines.
			GM	Silty gravel Silty gravel with sand	Silty gravels, gravel-sand-silt mixtures.
			GC	Clayey gravel Clayey gravel with sand	Clayey gravels, gravel-sand-clay mixtures.
	SAND AND SANDY SOILS		SW	Well-graded sand Well-graded sand with gravel	Well-graded sands or gravelly sands, little or no fines.
			SP	Poorly-graded sand Poorly-graded sand with gravel	Poorly-graded sands or gravelly sands, little or no fines.
			SM	Silty sand Silty sand with gravel	Silty sands, sand-silt mixtures.
			SC	Clayey sand Clayey sand with gravel	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS	SILTS AND CLAYS		ML	Silt; Silt with sand; Silt with gravel Sandy silt; Sandy silt with gravel Gravelly silt; Gravelly silt with sand	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Lean clay; Lean clay with sand; Lean clay with gravel Sandy lean clay; Sandy lean clay with gravel Gravelly lean clay; Gravelly lean clay with sand	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
	ELASTIC SILTS AND CLAYS		MH	Elastic silt; Elastic silt with sand; Elastic silt with gravel Sandy elastic silt; Sandy elastic silt with gravel Gravelly elastic silt; Gravelly elastic silt with sand	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Fat clay; Fat clay with sand; Fat clay with gravel Sandy fat clay; Sandy fat clay with gravel Gravelly fat clay; Gravelly fat clay with sand	Inorganic clays of high plasticity, fat clays.
HIGHLY ORGANIC SOILS			OL/OH	Organic soil; Organic soil with sand; Organic soil with gravel Sandy organic soil; Sandy organic soil with gravel Gravelly organic soil; Gravelly organic soil with sand	Organic silts and organic silt-clays of low plasticity. Organic clays of medium to high plasticity.
			Pt	Peat	Peat and other highly organic soils.

WELL CONSTRUCTION EXPLANATION




SOIL BORING NOTES:


Blow count represents the number of blows of a 140-lb hammer falling 30 inches per blow required to drive a sampler through the last 12 inches of an 18-inch penetration.

No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

S = Sampler sank into medium under the weight of the hammer (no blow count)
P = Sampler was pushed into medium by drilling rig (no blow count)
NR = No Recovery


SANDS & GRAVELS	BLOWS/FT	SILTS & CLAYS	BLOWS/FT
VERY LOOSE	0 - 5	SOFT	0 - 5
LOOSE	5 - 12	FIRM	5 - 10
MED. DENSE	12 - 37	STIFF	10 - 20
DENSE	37 - 62	VERY STIFF	20 - 40
VERY DENSE	OVER 62	HARD	OVER 40

 Approximate stabilized water level

 Approximate first encountered water level

NOTE: all percentages of lithological composition presented on the soil boring logs are approximate. They represent the best estimates of a Blue Rock geologist based on visual inspection in the field.

SOIL BORING LOG AND WELL CONSTRUCTION DIAGRAM LEGEND

 **BLUE ROCK
ENVIRONMENTAL, INC.**



**BLUE ROCK
ENVIRONMENTAL, INC.**

**Soil Management Contingency Plan for Future Subsurface Work
in Areas of Possible Petroleum Impacted Soils**

Former Beaver Lumber Company
1220 Fifth Street, Arcata, CA
NCRWQBCase No. 1NHU001
Blue Rock Project No. NC-1
April 7, 2006

This report presents a Soil Management Contingency Plan for Future Subsurface Work in Areas of Possible Petroleum Impacted Soils for the property located at the referenced site.

Introduction

This *Soil Management Contingency Plan For Future Subsurface Work* has been prepared by Blue Rock for Mr. Bradford C. Floyd (responsible party) in the event that potentially impacted soil may be exposed at the site during future subsurface work. This *Contingency Plan* addresses potential health and safety concerns and provides information for site workers performing excavation work, the public, as well as protection of the environment.

This *Contingency Plan* should be made part of any Illness and Injury Prevention documentation associated with the property. This *Contingency Plan* is in addition to all other applicable plans and does not negate or supersede those plans. In areas of conflict, the more stringent constraint shall apply.

Existing Petroleum Hydrocarbon Impacts

Areas where shallow soil (i.e. <3 meters bgs, ~<9.9 ft bgs) petroleum hydrocarbon impacts potentially reside beneath the surface are located in the area northwest of the site building, in the area of MW-2 (see Soil Sample Map). Maximum known remaining concentrations in shallow soil, based on past site investigation and laboratory analysis, are listed below.

Maximum Known Petroleum Hydrocarbons Levels in Shallow Soil (<3 meters bgs)

Compound	Maximum Concentration (mg/kg)
Benzene	<0.005
Toluene	<0.005
Ethylbenzene	<0.005
Xylenes	<0.005
TPHd	1.3
TPHmo	<10

Implementation Procedures

The responsible party shall provide a copy of this contingency plan to any new site owner / operator. It is the new owner's responsibility to provide a copy of this contingency plan to all employees and contractors whose normal work and duties may reasonably be expected to lead to contact with petroleum hydrocarbon impacted soil below ground surface at the site. Contractors shall provide a copy of this plan to each employee working on the site property whose normal work may put them in contact with petroleum hydrocarbon impacted soil.

Site Workers

Care should be taken to avoid excessive exposure through dermal contact or inhalation during minor below ground surface work and repairs. Major below ground surface work in site areas indicated should be undertaken by personnel or contractors who have completed the standard Occupational Safety and Health Administration (OSHA) 40 hour hazardous materials (HAZWOPER) training course (CFR 1910.120), and if necessary, the 8 hour "refresher" training update within the last year.

Contractors

Any and all contractor personnel whose below grade work on the site may be reasonably expected to expose any of the remaining petroleum hydrocarbon impacted soil shall prepare a site specific health and safety plan for the work to be conducted. This plan shall be incorporated into any existing site health and safety plans so prepared.

All contractor personnel whose normal work duties may reasonably expose them to any petroleum impacted soil remaining on site for extended periods shall possess documentation of completion of the standard OSHA 40 hour hazardous materials (HAZWOPER) training course (CFR 1910.120), and if necessary, the 8 hour "refresher" training update within the last year.

Contractor personnel whose work may be reasonably expected to place them in contact with petroleum hydrocarbon impacted soil shall have respirators, fitted with organic vapor cartridges, close at hand on site or in their immediate possession, at all times during the conduct of the work. All contractor personnel working in described conditions shall also possess documentation of a respirator "fit test" and shall be medically certified to wear a respirator while working.

The contractor's supervisor or the site safety officer shall conduct and document a tailgate site safety meeting prior to the beginning of work and at least every ten working days thereafter for the duration of the project. All employees attending site safety meetings shall sign the meeting record as documentation of their attendance.

Safety discussions will include the Code of Safe Work practices, air quality hazards related to petroleum compounds, specific site safety hazards, trenching and excavation hazards and general safety guidelines as needed. Underground Service Alert shall be notified at least 48 hours in advance of any major subsurface or excavation work. The Humboldt County Division of

Environmental Health (HCDEH), or other appropriate regulatory agency, shall be notified prior to any anticipated work in the identified areas of potential petroleum impact.

In the event of emergency repairs involving said impacted areas, such that delay would cause immediate danger to life, health, property, structures or the environment, the HCDEH and other affected agencies should be notified as soon as reasonably possible as to the nature of the emergency and steps towards resolution.

Site Monitoring and Personal Protective Equipment

Site Workers

If, during the course of normal minor repairs or other work in areas determined to be potentially impacted with petroleum, a worker detects hydrocarbon odors (i.e. a smell of diesel fuel) work should cease until such time that the site can be monitored by qualified personnel (contractors engineers, geologists, or environmental health specialists) who have completed the required OSHA training outlined above and have equipment for monitoring air quality.

While performing any work below ground surface in impacted areas care should be taken to minimize dermal contact through the use of hydrocarbon resistant gloves as well as clothing specified in a "Level D" work environment. If dermal contact occurs the affected area should be washed with soap and water. Hands should be washed following work in any impacted area.

Contractors

When petroleum impacted soil is excavated, or otherwise exposed to the atmosphere during work performed below grade on site in areas of potential petroleum impacted soil, routine air quality monitoring should be conducted by qualified personnel using appropriate gas detection and monitoring equipment. A first aid kit as well as a 10-pound fire extinguisher shall be on site with the location known to all project personnel. The standard OSHA poster of emergency telephone numbers shall be posted in full view.

Respirators shall be donned when air quality monitoring in the area of activity indicates the concentration of benzene exceeds 1 ppm or total petroleum hydrocarbons exceeds 100 ppm.

Personal Protection

Site Workers

Except as indicated, normal work garments are acceptable. Nitrile or other hydrocarbon resistant gloves shall be required when contact with petroleum impacted soil is possible.

Contractors

Except as indicated, modified "Level D" personal protection is acceptable, including: normal work garments, ankle-high steel-toe rubber boots, hard hat and safety glasses. Nitrile or other hydrocarbon resistant gloves shall be required when contact with petroleum impacted soil is possible.

As noted above, all contractor field personnel working within the petroleum impacted area shall possess a National Institute for Occupational Safety and Health (NIOSH) approved air purifying half-face respirator fitted with an approved organic vapor cartridge (Wilson R-21 or equivalent). Respirators shall be maintained, inspected stored and cleaned in accordance with standard procedures. All personnel shall be trained in the proper use of the respirator and possess documentation of a positive fit test.

Waste Management

In the event that petroleum impacted soil is exposed during future subsurface or excavation work, impacted soil shall be excavated under the direction of qualified personnel to the extent possible. Quantities of soil less than two cubic yards will be contained within secured Department of Transportation (DOT) approved 55-gallon drums for proper disposal. Larger quantities of petroleum impacted soil will be stockpiled on site or, with regulatory approval, hauled off site for immediate disposal.

If soil is stockpiled on site it shall be underlain and covered with 6 mil plastic and enclosed with approved fencing with a 6 foot minimum height to limit public exposure until it can be characterized and disposed of per regulatory approval.

If petroleum impacted soil is to be disposed of off-site it shall be done with prior regulatory notification and approval to qualified waste sites by a licensed hauler. Copies of manifests and weigh tickets shall be provided to the regulatory agency.

Attachment

- Soil Sample Map

Certification

This report was prepared under the supervision of a California Professional Geologist at Blue Rock. All statements, conclusions, and recommendations are based upon published results from past consultants, field observations by Blue Rock, and analyses performed by a state-certified laboratory as they relate to the time, location, and depth of points sampled by Blue Rock. Interpretation of data, including spatial distribution and temporal trends, are based on commonly used geologic and scientific principles. It is possible that interpretations, conclusions, and recommendations presented in this report may change, as additional data become available and/or regulations change.

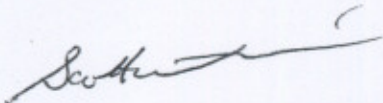
Information and interpretation presented herein are for the sole use of the client and regulating agency. The information and interpretation contained in this document should not be relied upon by a third party.

The service performed by Blue Rock has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

If you have any questions regarding this project, please contact us at (707) 441-1934.

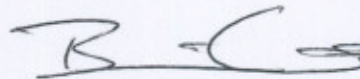
Sincerely,
Blue Rock Environmental, Inc.

Prepared by:



Scott Ferriman
Project Scientist

Reviewed by:



Brian Gwinn, PG
Principal Geologist



